PHYSICAL PROPERTIES OF INCEPTISOLS IN MIXED DRYLAND FARMING AT VARIOUS SLOPES IN NGLANGGERAN VILLAGE PATUK DISTRICT GUNUNG KIDUL REGENCY

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ABSTRACT

Nglanggeran Village has great potential in the agricultural sector with a mixed dryland farming system. The physical properties of soil on mixed dry land are influenced by several factors, especially the amount of waste, resulting in various variability values. This study was aimed to determine the physical properties and organic-C content of soil at various levels of slope in Nglanggeran village. The research method was survey and laboratory analysis. Sample points on the Land System Map are the result of overlaying the administrative map, land use map, slope map, and soil type map. The results show that Nglangegeran village has a loamy soil texture on flat, sloping, and moderately steep slopes and a loamy soil texture found on sloping, moderately steep, and steep slopes. Moderately steep slopes have higher values of bulk density, particle density, permeability, and air-dry soil moisture content compared to other slopes with bulk density values ranging from 0.98 g/cm3 - 1.27 g/cm3, particle density ranging from 2.25 g/cm3 - 2.42 g/cm3, Permeability of 1.2 cm/h - 2.3 cm/h rated as slow to moderate, and air-dry soil moisture content ranging from 3.78% - 5.57%. Soil porosity values on gentle slopes are higher than other slopes with soil porosity values ranging from 58% - 60.3% with a good rating. Steep slopes have a higher soil organic-C value compared to flat, gentle, and slightly steep slopes with a value of 2.42% with a moderate value.

Keywords: Mixed dryland farming, Nglanggeran village, Soil physical, Slope